

REMARKS

Responsive to the outstanding Office Action, applicant has carefully studied the Examiner's rejections and the comments relative thereto. Favorable reconsideration of the application is respectfully requested in light of the amendments and following detailed arguments.

In the response, claim 11 has been amended and claim 21 has been canceled. Support for the amendments to claim 11 can be found, at least, in paragraph [0041] of the published international application, and page 8, lines 9-10 of the US translation as filed. It is respectfully submitted that no new matter has been presented in these amendments.

Rejection under 35 USC 112, first paragraph

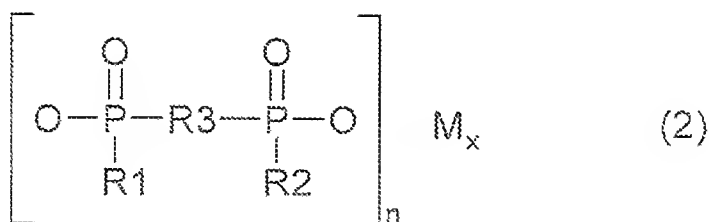
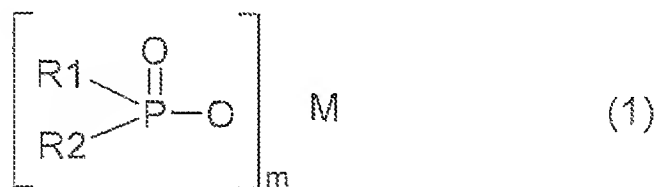
Claim 21 was rejected under 35 USC 112, first paragraph, for containing new matter. Claim 21 has been canceled herein, thereby rendering the rejection thereagainst moot.

Rejections under 35 USC 103

Claims 11, 13, 17 and 19-20 are again rejected under 35 USC 103 as being unpatentable over Saga (US 2005/0113496) in view of the previously cited Sugino reference and further in view of Schmid (US 4,963,610).

Claim 21 was rejected under USC 103 as being unpatentable over Schlosser in view of Sicken, Sabino and Saga. Claim 21 has been canceled herein thereby rendering the rejection thereagainst moot.

Independent claim 11 defines a flameproof polyamide molding compound. The compound comprises 20 - 80% by weight of one or more aliphatic polyamides and 1 - 40% by weight of one or more partly aromatic polyamides, which are selected from the group consisting of polyamides, the periodical units of which are derived from terephthalic acid and isophthalic acid and adipic acid and also hexamethylene diamine, and 5 - 15% by weight of a flameproofing agent, containing a



phosphinic acid salt of formula (I) and/or a diphosphinic acid salt of formula (II) and/or polymers thereof. R¹, R² are the same or different and is C₁-C₆ alkyl, linear or branched, and/or aryl; and R³ is C₁-C₁₀ alkylene, linear or branched, C₆-C₁₀ arylene, -alkyl arylene or aryl alkylene and M is metal ion from the 2nd or 3rd main or auxiliary group of the periodic table. Further m is 2 or 3, n is 1 or 3, and x is 1 or 2. The compound further comprises 5 - 60% by weight of a fibre- or particle-like filler or mixtures thereof and 0.05 - 10% by weight by additional additives wherein the sum of the proportions is 100% by weight. The additional additives are selected from the group

consisting of anti-oxidants, light stability agents, lubricants, mold-release agents, nucleation agents, pigments, colorants and anti-dripping agents.

The list of potential additives described in part e) has been refined in the present invention. The additives listed are specifically enumerated in the international application, as filed.

Saga, as noted previously, requires phenolic resins. These compounds are mandatory to the Saga reference. One skilled in the art would recognize that none of the categories disclosed above comprise phenol resins for additives according to the polyamides of the current invention.

None of the materials disclosed in parts (a) through (e) of claim 11 disclose, or could incorporate phenolic resins. Paragraph (e) of this claim requires that the components described therein add up to 100% by weight. Therefore, the compound described in claim 1 could not contain additional materials, such as the phenolic resins which are required by the Saga reference.

Modifying Saga is also not an option to render the current invention obvious. Saga requires, to function as intended, the presence of the phenolic resins. To remove these resins from Saga,

. Saga describes a flame retardant composition comprising 20-90% of (A) polyamide and (B) phenolic resin, wherein the ratio of (A) to (B) is between 99:1 and 40:60 by weight. These ratios clearly define that the presence of the phenolic resin is strictly required.

Further, while paragraphs 0015-0017 of the description describe various polymers (copolymers and homopolymers), containing different monomers, nothing

discloses 20-80% by weight of one or more aliphatic polyamides, 1-40% by weight of one or more partly aromatic amides, selected from the group consisting of polyamides, the periodical units of which are derived from terephthalic acid and isophthalic acid and adipinic acid and also hexamethylene diamine as disclosed in the present invention. Not only are these not disclosed, there is no suggestion of any form to select these specific types of polymers claimed in the present invention.

The Examiner concedes that Saga fails to teach the exact amount of aliphatic polyamide and aromatic polyamides as claimed. Saga also does not teach the amount of additional additives claimed.

The Examiner states that Saga requires the presence of a phenolic resin. From paragraph [0008] of Saga, the Examiner determines the amount of phenolic resins to be between 0.2 wt % to 54 wt %. The Examiner has equated these resins as being comparable to the compounds found in claim 11 (e) of the present invention.

The Examiner argues that Saga teaches a polyamide composition that comprises the same flame retardants in the same amount. The Examiner appears to argue that the phenolic resin, which is mandatory for the polyamide composition according to Saga, would be encompassed by the additives which are described by the group in feature e) of pending claim 11.

It is respectfully submitted that this applied references do not encompass phenolic resin as claimed in feature e). Per definition processing aids are substances which are intentionally used in the processing of raw materials to fulfill a certain technological purpose during treatment or processing and which may result in the unintentional but technically unavoidable presence of residues of the substance in the

final produce, provided that these residues do not have any technological effect on the finished produced. From this definition it becomes clear that processing aids, in sense of present application, facilitate the compounding of the materials of the polyamide molding compound, however, do not have any technical effect on the finished product.

From the reading of Saga et al. it becomes clear that the phenolic resin act as char former (see for example [0024]) and therefore have a clear technical effect. Applicants therefore remain of the opinion that phenolic resins cannot be compared to any of the mentioned additives under feature e) of pending claim 11.

The Examiner cites Schmid to show up to 20% of the usual additives, including pigments and stabilizers. It is respectfully submitted that nothing in Schmid effects the analysis above, with respect to the aliphatic and aromatic polyamides. However, it should also be noted that Schmid requires 40-70 wt % magnesium hydroxide. It is respectfully submitted that one skilled in the art would not look to this reference in any case, as this significant proportion of magnesium hydroxide is unrelated to the components of the present invention. One skilled in the art using the components of the present invention would not look to Schmid relative to additives, when the base compositions are so significantly different.

As noted hereinabove, the primary reference does not disclose the additives claimed herein, and the additives described therein are not comparable. Neither of the secondary references add anything to show these additives.

As noted previously, the invention provides a significant improvement in the mechanical properties of the inventive molding as opposed to the known moldings. The higher the breaking elongation of the material, the less brittle the compounds are. This

is very important in the case of snap connections, which are often used in, for example, the electrical industry. Thus the properties of the claimed invention are superior to those of compounds currently known in the art.

Further indicators of the superior properties of the claimed invention can be found in Table 2. The inventive moldings shown herein have a breaking elongation of 2.9 (example 3) and 2.8 (example 4). Comparative example 2, to the contrary, provides a breaking elongation of only 1.8.

Tables 1 and 2 also show that the moldings of the present invention fulfil the requirements of the inflammability test UL-94 at a thickness of 0.4 to 0.8 mm, as shown in tables 1 and 2, even though the percentage of fireproofing agents is much lower than those in comparable known moldings. Known molding compounds require a much higher content of flame retardants to meet the requirements of UL-94, and even then require a thicker component to meet these same requirements.

Claim 11, as noted above, has been amended to more precisely show the compounds utilized and the ratios of components in the invention. It is respectfully submitted that no reasonable combination of the applied references show the compound as claimed in claim 11 as amended.

In view of this, and in view of the improved properties of the invention relative to the applied reference, as discussed above, It is respectfully submitted that no reasonable combination of the applied references yield the invention as claimed in claim 11. One skilled in the art would not come to the teachings of the present invention from the references cited.

Claims 13-15, 17 and 19-20, which depend directly or indirectly from independent claim 11, are believed to be allowable based, at least, upon this dependence.

Should the Examiner wish to modify the application in any way, applicant's attorney suggests a telephone interview in order to expedite the prosecution of the application.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Mark A. Hixon', with a stylized flourish at the end.

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